

## **REMARKS**

### **Overview**

In the Office Action under reply, claims 24-30, 38-40, and 91 were examined, claims 1-23, 31-37, and 41-90 having been canceled previously by applicant. The Examiner has rejected the claims as follows:

1. claims 24 and 27-29 have been rejected under 35 U.S.C. § 102(e) as anticipated by Parker et al., U.S. Patent Application Publication No. 2003/0055190 A1 (hereinafter "Parker"); and
2. claims 24-30, 38-40, and 91 have been rejected under 35 U.S.C. § 102(b) as anticipated by Hart et al., U.S. Patent No. 3,150,977 (hereinafter "Hart").

These rejections are overcome in part by the amendments made herein, and are otherwise traversed for the reasons set forth below.

Please note that the specification has been amended at paragraph [00103] to correct an inadvertent typographical error.

### **Claim Amendments**

With the amendments made herein, claim 24 has been amended to specify that the hydrophilic monomer is selected from N-vinyl lactams, vinyl alcohols, vinyl amines, maleic acids, esters of maleic acids, maleic acid-co-methylvinyl ethers, esters of maleic acid-co-methylvinyl ethers, sulfoalkylacrylates, sulfoalkylmethacrylates, hydroxystyrene, allyl alcohols, crotonic acid, and itaconic acid. Support for this amendment can be found at least in original claim 25 and paragraph [0070]. In light of the amendment to claim 24, claim 25 has been canceled and the dependency of claim 26 has been updated. Claim 38 has been amended to remove  $-(CO)-O-$ ,  $-NH-(CO)-$ , and  $-NH-(CO)-O-$  as options for  $L^1$ . In light of the amendment to claim 38, claim 39 has been canceled. Claim 91 has been amended to remove  $-NH-(CO)-O-$  as an option for  $L^1$ . New claim 92 depends from claim 24, and further limits the hydrophilic monomer. Support for this claim can be found in the original specification, for example at paragraph [0070]. No new matter has been added by these amendments.

### **General remarks on the relevant legal principles**

The Examiner has found in both the cited prior art references general disclosures which have some potential overlap with what is claimed. As a result, the Examiner has rejected the claims as anticipated.

In general this is not legally correct. For example, a prior art reference may disclose steroids in general, giving the well-known four-ring structure and indicating that steroids in general are known to be substituted compounds of that structure. The four-ring structure of steroids was discovered decades ago. That disclosure does not prevent the patenting of particular steroids, which is going on even today.

In general, a prior art reference can only anticipate if there is an individual and specific disclosure of a particular compound falling within what is presently claimed. In some exceptional cases, a prior art reference can anticipate by disclosing a small genus which includes a compound being claimed, because the disclosure of the genus is deemed to be a disclosure of all the individual compounds within it. However, the disclosure of large genus overlapping what is claimed is not anticipatory. *See, e.g., In re Ruschig*, 343 F.2d 965, 974 (CCPA 1965); *In re Arkley*, 455 F.2d 586 (CCPA 1972); MPEP § 2131 (noting that a prior art reference discloses a compound individually, as required for anticipation, only if the reference describes the compound in such terms that a person of skill in the art can “at once envisage” it).

The Examiner in certain rejections has relied on inherency. “Inherency . . . may not be established by probabilities or possibilities.” *In re Oelrich*, 666 F.2d 578, 581 (CCPA 1981) (Rich, J.) (quoting *Hansgirk v. Kemmer*, 102 F.2d 212, 214 (CCPA 1939)). “It is not sufficient that a person following the disclosure might obtain the result set forth in the [claim]; it must invariably happen.” *Gubelmann v. Gang*, 408 F.2d 758, 766 (CCPA 1969).

### **Rejection under 35 USC § 102(e):**

Claims 24 and 27-29 stand rejected under 35 U.S.C. § 102(e) as anticipated by Parker, the Examiner citing the reasons set forth in the non-final Office Action of 31 May, 2005. This rejection is traversed for at least the following reasons.

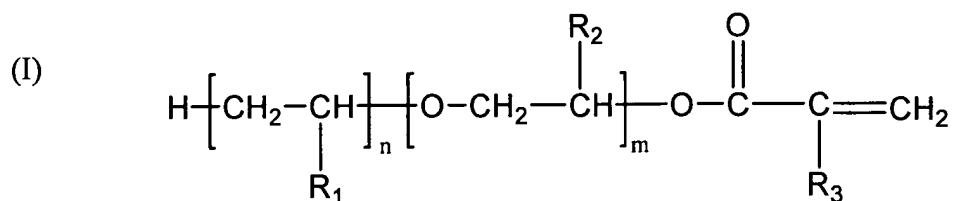
The Examiner relies on paragraphs 1 and 6-14 of Parker. These are general disclosures based on a formula (I) for a “synthetic wax” monomer (SWM). By varying the substituents and variables in Parker’s formula (I) (i.e., m, n, R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup>) one is able to prepare a wide range of

compounds. Indeed, a wide variety of SWMs are allowed simply based on the allowed range for the variables n and m ( $n = 9-115$ ,  $m = 0-1370$ , resulting in the possibility of over 145,000 distinct compounds). By also modifying  $R^1$ ,  $R^2$  and  $R^3$ , well over 1 million distinct SWM compounds are possible. This general disclosure of a very large number of “synthetic wax” monomers does not disclose any of the monomers in particular with the level of particularity required to make an anticipation rejection under the legal authority cited above.

In the Action, the Examiner states that “the teachings of the disclosed structure (I) broadly encompass polymers that are hydrophilic and hydrophobic, water soluble and water insoluble polymers.” Applicants disagree with this interpretation of Parker. However, this statement by itself makes it clear that Parker’s formula (I) does not inherently anticipate a claim to a water-soluble polymer, because that formula encompasses SWM’s which result in many polymers which are not water soluble. Inherency requires, as shown by the legal authorities cited above, that the property said to be inherent (here water solubility) be the invariable result of the prior art disclosure being relied on.

In addition, it is *abundantly* clear that Parker’s teachings are directed only towards materials that are *not water soluble*.

For reference, the polymer materials noted by the Examiner derive from polymerization of from 1 to less than 50 percent by weight of a synthetic wax monomer (SWM) of Formula (I)



along with from 50 to 99 percent by weight of at least one second monomer. In Formula (I),  $R_1$  is selected from H and  $\text{CH}_3$ ,  $R_2$  is selected from H and  $\text{C}_1\text{--C}_5$  alkyl,  $R_3$  is selected from H and  $\text{CH}_3$ ,  $n=9\text{--}115$ , preferably  $12\text{--}90$ , more preferably  $15\text{--}50$ , and  $m=0\text{--}1370$ , preferably  $0\text{--}65$ , more preferably  $0\text{--}50$ . It is clear from the discussion of Parker that these materials are not water soluble.

In paragraph [0002], Parker states that “there is a need for low cost polymer compositions which provide... water resistance.” Parker repeats this statement in paragraph [0004]. Since water soluble polymers would have no water resistance whatsoever, it is clear that the invention (i.e., the final product) targeted by Parker is a water insoluble compound. It is true that post polymerization procedures described in Parker (e.g., crosslinking, as described in paragraph [0032]) could convert water-soluble polymers into water insoluble materials. However, the discussion of Parker also leads to the conclusion that all of the products (whether crosslinked or not) are water insoluble.

Based on the methods of polymerization, it is evident that the materials prepared in Parker are water insoluble polymers. In paragraph [0032], Parker states that “[s]uitable processes [for preparing the polymers of the invention] include solution polymerization, aqueous suspension polymerization, and aqueous dispersion polymerization.” One of skill in the art would immediately recognize that these synthetic methods are designed for the preparation of polymers that are insoluble in water. This is true especially in light of Parker’s discussion pertaining to the polymer products that result from each of these synthetic methods:

**Dispersion polymerization:**

Paragraph [0041] of Parker states that “[t]he dispersion process will yield a latex polymer. The polymer from the latex can be isolated by any method known in the art, such as spray drying, freeze drying, or coagulation.” It is well known in the chemical arts that a latex is an emulsion of a polymer in water, and that latexes may only be formed with water insoluble polymers.

**Suspension polymerization:**

Paragraph [0034] specifies that a suspension polymerization is carried out in water. Paragraph [0041] states that “[t]he suspension process *will yield polymer beads*. The polymer beads can be isolated by filtration” (emphasis added). One of ordinary skill would immediately recognize that polymer beads are only possible for insoluble materials. Furthermore, paragraph [0034] states that “[t]he aqueous solution may contain a suspending agent/dispersant for *stabilizing polymerization droplets*” (emphasis added). One of ordinary skill would recognize from these statements that the polymer product is insoluble in water. The polymer necessarily

forms particles in aqueous solutions; these particles may be stabilized by dispersants and isolated by filtration.

**Solution polymerization:**

Paragraph [0041] also states that “[t]he solution process will yield a homogeneous polymer solution when a good solvent is used. Toluene, xylene, and decalin are examples of good solvents.” The fact that these solvents, which are immiscible with water, are good solvents indicates that the materials of Parker are insoluble in water.

Clearly, based on each of the methods that are described, Parker is directed toward polymer products that are insoluble in water.

Furthermore, it is clear that the SWM themselves are insoluble in water. For example, in paragraph [0033], Parker states that “[i]n the slurry process of the invention, a slurry is formed by cooling a solution containing the SWM and a solvent until the SWM precipitates out of solution as crystals. This process may be used for solution or suspension polymerization.” Suitable solvents are identified as including hexane, heptane, xylene, toluene, etc., all of which are immiscible in water. In addition, paragraph [0034] states that “[f]or a suspension process embodiment, the SWM may be admixed with other monomers and an aqueous solution and heated until the SWM is melted and *dissolved in the organic phase*” (emphasis added). Clearly from this statement, the SWM is soluble in the organic phase, and not in the aqueous phase.

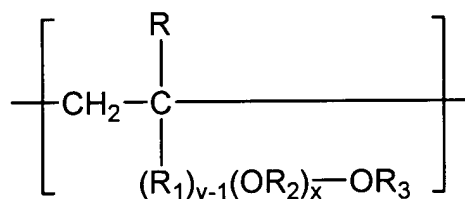
It is also abundantly evident that the final products from Parker are water insoluble materials. Paragraph [0087] states that “the polymers of this invention are useful as water repellents in nonwoven and textile applications.” Paragraph [0113] states that “the polymers of this invention provide good water resistance and are suitable for wood treatment applications.” Therefore, “the polymers of this invention” are suitable in uses that require water insolubility. Data is also provided in applications such as floor polish, dry powder coatings and hot melt sealants. Water insolubility is a desirable property for any material used in these applications. Therefore, not only does Parker fail to state that any of the materials of the invention might be water soluble, Parker makes it clear that the materials of the invention are useful in applications where water insolubility is a key property of the material.

Based on the entirety of Parker's specification, it is clear that Parker is directed solely toward compounds that are water insoluble.<sup>1</sup> Consequently, one cannot find in Parker a water-soluble, hydrophilic adhesive polymer as recited in the currently pending claims, and withdrawal of the rejection is respectfully requested.

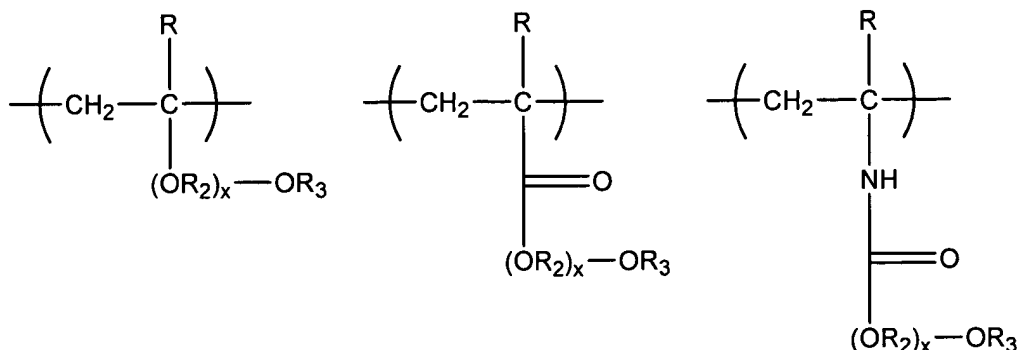
**Rejection under 35 USC § 102(b):**

Claims 24-30, 38-40, and 91 stand rejected under 35 U.S.C. § 102(b) as anticipated by Hart, the Examiner citing the reasons set forth in the non-final Office Action of 31 May, 2005, which relied on col. 2, lines 4-37 of Hart. This rejection is traversed for at least the following reasons.

Hart describes vinyl polymers or copolymers with recurring units of the following general formula:



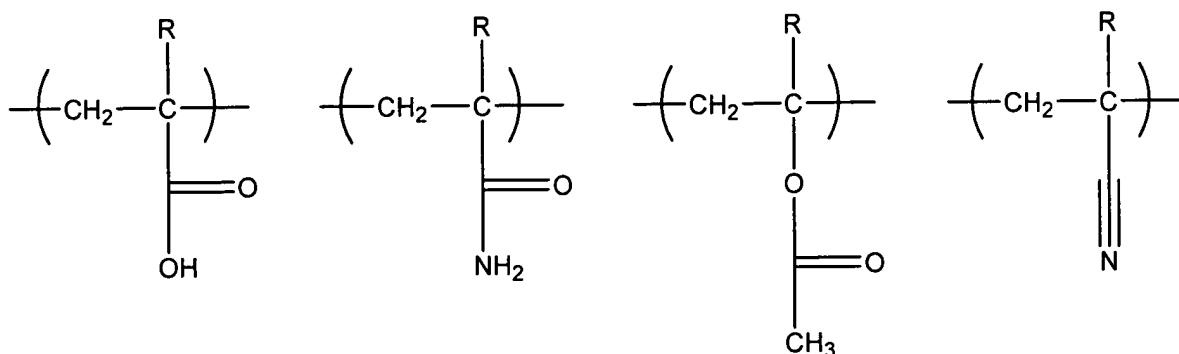
wherein R<sub>1</sub> is selected from the group consisting of a carbonyl group and a –NH–CO– group. As example polymers, Hart mentions polyacrylates, polyvinyl ethers and poly-N-vinylcarbamates of monosubstituted polyethylene glycols. Polymers with these structures have the following general formulae:



<sup>1</sup> To the extent the Examiner believes it would be incumbent on the applicants to present evidence that none of the polymers encompassed by Parker's general formula is water soluble, such a requirement would not be reasonable. The general formula of Parker encompasses at least about 1 million possibilities, and it would be impossibly burdensome to synthesize them all and show that none of them are water soluble.

Again, there is a broad disclosure here of a large genus of compounds, which is generally insufficient for anticipation as discussed above.

Hart also mentions that copolymers may be formed using the following vinyl monomers: acrylic- and methacrylic acid; acryl- and methacrylamide; vinylacetate; and acrylonitrile. Polymers prepared from these monomers have the following structures:



As stated in MPEP § 2131, “A generic chemical formula will anticipate a claimed species covered by the formula when the species can be ‘at once envisaged’ from the formula.” Based on the teachings of Hart, one can at most “at once envisage” vinyl polymers with the structures shown above.

The structures shown above do not, however, anticipate the compounds that are described in the pending claims as amended herein. Regarding claim 24 (and claims depending from claim 24), the compounds are polymers that are prepared by polymerization of a composition consisting essentially of a hydrophilic monomer and an acrylic acid monomer esterified with a hydrophilic side chain, wherein the hydrophilic monomer is selected from N-vinyl lactams, vinyl alcohols, vinyl amines, maleic acids, esters of maleic acids, maleic acid-co-methylvinyl ethers, esters of maleic acid-co-methylvinyl ethers, sulfoalkylacrylates, sulfoalkylmethacrylates, hydroxystyrene, allyl alcohols, crotonic acid, and itaconic acid. These hydrophilic monomers are neither taught nor suggested by Hart. For at least these reasons, claims 24-30 are not anticipated by the contents of Hart.

With regards to claims 38, 40, and 91, the rejection is traversed because Hart is limited to polymers with a structure of the general formula shown above wherein  $\text{R}_1$  is carbonyl or

-NH-CO-. However, the pending claims as amended herein require that L<sup>1</sup> (which may be compared to the group R<sub>1</sub> in Hart) is selected from -O-(CO)-, -O-(CO)-O-, -(CO)-NH-, -O-(CO)-NH-, -S-S-, -S-(CO)-, and -(CO)-S-. One of ordinary skill would not 'at once envisage' polymers with these moieties based on the description in Hart.

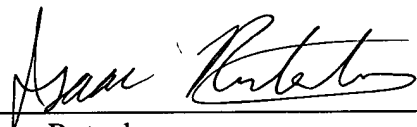
For at least the foregoing reasons, the discussion in Hart does not anticipate the claims of the application. Accordingly, applicants respectfully request that the rejection be reconsidered and withdrawn.

### CONCLUSION

For at least the foregoing reasons, applicants respectfully submit that the claims are in condition for allowance, and respectfully request an indication of allowable subject matter. Prompt mailing of a Notice of Allowance would be very much appreciated.

Should the Examiner have any questions concerning this communication, or wish to discuss the application so as to preclude need for a further Action, he is invited to contact the undersigned agent at (650) 251-7724.

Respectfully submitted,

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